32. (New) The system of claim 31 wherein the predetermined condition comprises a web page queue length greater than a predetermined value.

33. (New) The system of claim 31 wherein the predetermined condition comprises a web page queue delay greater than a predetermined value.

REMARKS

Claim Cancellations, Additions and Status

Claims 1-25 were pending in this application. Applicants hereby cancel claims 2-5, 17-19, and 21-24 without prejudice, and add claims 26-33. Upon entry of this Amendment and Response, claims 1, 6-16, 20, and 25-33 are pending, of which seven are independent claims (claims 1, 15, 20, 26, 27, 29, and 31), and fifteen of which are dependent claims. No new matter has been added by the new claims. A check for the fee for the additional claims is enclosed.

New Claims 26-35

The following table represents the prior pending claims that were incorporated into the new claims.

New Claim	Prior Pending Claim(s) Incorporated
26	1 and 21
27	1 and 2
28	3
29	1 and 4
30	5
31	15 and 22
32	23
33	24

Additionally, claims 26 and 31 refer to a "central manager." This language was added to provide further clarity to these claims and is fully supported by Applicants' specification.

Claim Rejections

Claims 1, 6, 9-16, 19-2,2 and 25 are rejected under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,128,279 to *O'Neil et al.* ("O'Neil"). Additionally, claims 2-5, 7-8, 17-18, and 23-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over O'Neil, in further view of United States Patent No. 6,148,335 to *Haggard et al.* ("Haggard").

O'Neil

O'Neil discloses a peer-to-peer load balancing system which implements a load balancing module that is resident on each individual web server. For example, "server 7 includes load balancing module 17, server 9 includes load balancing module 19, and server 10 includes load balancing module 20" (col. 5, lines 37-40). Each O'Neil server having a load balancing module forwards its load information to each of the other servers having a load balancing module, as disclosed in column 3, lines 36-48:

> A network server according to a related aspect of the invention exchanges information with its peers regarding their respective loads. This exchange may be implemented based on either a query/response or unsolicited multicasts among the server's peers, and may be encrypted or may occur over a private communication channel. The exchange may be implemented to occur periodically or may be triggered by a network event such as an incoming request. In a preferred embodiment of the invention, each server multicasts its load information to its peers at a regular period (e.g., 500 ms). This period may be set in advance and subsequently re-set by a user. In the preferred embodiment, the multicast message serves the dual purposes of exchanging load information and of confirming that a transmitting server is still on-line.

In O'Neil, each server communicates with the other "peer" servers that include a load balancing module. When a request needs to be redirected, the redirecting server uses load information from the other servers and itself when choosing a destination server for the redirected request. The determination of whether redirection is to take place is based on up-to-date information by virtue of the broadcast type communication between the servers. As stated in O'Neil at column 3, line 49-57:

> By virtue of the foregoing, and by virtue of the server having nearly instantaneous information regarding its own workload, the server is able to make routing determinations based on substantially up-to-date information. The most critical decision, i.e., whether to consider rerouting, is preferably made based on the most current information available (i.e., based on a local server load provided nearly instantaneously from within the server and without any network transmission latency).

If it is determined that a request should be redirected to another one of the web servers, "routing is performed by sending a command from the load balancing module 17 to a requestor instructing the requestor to send the request to a designated server" (col. 7, lines 26-30).

Haggard

Haggard is directed at gathering, storing, and presenting server statistical information. More specifically, the "invention allows data processing system 20 to act in a manner similar to a client, in order to collect server resource information 110, and then analyze 112 and present 114 this information to an end user" (col. 6 lines 5-8). Additionally, the data is gathered at various times from various servers: "data collection from different servers can occur at different times, i.e., there is no need for data processing system 20 to be continuously connected to each of the servers" (col. 7, lines 19-22). The collected data is then stored, analyzed, and presented to the user, as described in column 7, lines 23-27, and 45-50:

> Once the data has been collected, it can be deposited into an appropriate database (116), and perhaps merged with other historical data previously collected. The collected data can then be forwarded (e.g., via FTP) to a node running an analysis program, such as the Statistical Analysis System (SAS). The analyzed data can be presented in a variety of media or formats. In one implementation, a web browser can again be used to view the analysis, by creating an HTML file which is then placed on the network (e.g., the World Wide Web) in such a manner as to be accessible and usable by the end-user.

As stated above, Haggard extracts server data at different times from different servers for analysis and display to a user. Various system statistics are calculated by Haggard. For example, as described at column 7 lines 64-57 and column 8, lines 1-13:

> Statistical parameters shown include: the number of observations; CPU utilization; system usage percentage; user usage percentage; percentage of time I/O wait is greater than 40%; run queue length; active virtual memory (AVM); free space (FRE); percentage of time CPU utilization is greater than 85%;

percentage of time CPU utilization is greater than 90%; percentage of time run queue is greater than 5; percentage of time storage usage is greater than 85%; percentage of time storage usage is greater than 90%; and percentage of time paging rate is greater than 5 pages per second. FIG. 6B demonstrates an OS/2 example of page 124 showing the multiple server view. Statistical parameters shown include: server's overall status, i.e., red, yellow or green; server name; total daily samples this month; total minute samples this month; CPU utilization; memory utilization (can exceed 100% if paging occurs demonstrating additional demand for memory); disk utilization; LAN response time; and print queue backlog.

Claim 26

Applicants' claim 26 recites, in part, "a central manger for monitoring web servers." O'Neil fails to teach or suggest a "central manger" for monitoring the web servers. Instead, O'Neil teaches distributed load balancing modules determining the load on the web servers, which is distinctly different from Applicants' claimed invention. O'Neil teaches that if a determination is made that the request should be redirected to another server implementing a load balancing module then "routing is preformed by sending a command from the load balancing module 17 to a requestor instructing the requestor to send the request to a designated server" (col. 7, lines 26-30). Servers that implement a load balancing module broadcast their current load condition to all the other servers on the network, "each server multicasts its load information to its peers at a regular period (e.g., 500 ms)" (col. 3, lines 42-44). Therefore, O'Neil fails to teach or suggest each and every element claimed by Applicants.

In further contrast to O'Neil, Applicants' claim 26 recites, in part, "the redirection is initiated by an agent running on a same host as the web server, the agent in communication with a web server interface and the manager, wherein the web server interface provides an interface between the web server and the agent, and the web server interface causes that web server to redirect web page requests." Applicants' claim recites, in part, that the redirection is "initiated by an agent" and ultimately, "the web server interface causes that web server to redirect the web page requests." O'Neil fails to teach or suggest an "agent" initiating the web page redirection, instead O'Neil teaches the entire redirection process being handled by the load balancing module. Additionally, O'Neil fails to teach or suggest a "web server interface" causing the web server to redirect the web page requests. As stated previously, O'Neil teaches a load balancing module

handling the entire determination and redirection process, and not a "web server interface" causing the web server to redirect the web page requests. Therefore, O'Neil does not teach or suggest Applicants' claimed invention.

Claims 31-33

Applicants' claim 31 recites in part, "a central manger for monitoring web servers" and "an agent in communication with the manager, wherein the agent communicates the status of the web server to the manager." As described above, O'Neil fails to teach or suggest a "central manger" for monitoring the web servers, instead, O'Neil teaches the load balancing module monitoring the load on a web server, which is distinctly different from Applicants' claimed invention. Further, O'Neil fails to teach or suggest an "agent in communication with the manager" such that the agent reports the status of the web server to the manager. In contrast, O'Neil teaches multicasting the status of each and every web server to each and every web server within the system. Servers implementing a load balancing module broadcast their current load condition to all the other servers on the network, "each server multicasts its load information to its peers at a regular period (e.g., 500 ms)" (col. 3, lines 42-44). As stated above, O'Neil teaches the load balancing module performing all redirection and load determination tasks. O'Neil's approach is distinctly different from reporting the status of the web server through an agent to a central manager, as claimed by Applicants. Therefore, O'Neil does not teach or suggest Applicants' claimed invention. Additionally, because claims 32 and 33 depend from an allowable base claim, Applicants respectfully request that they be passed to allowance in due course.

Claims 27-30

As stated in the Office Action on page four, item six, "O'Neil is silent as to how the predetermined load condition [is] being monitored." Applicants respectfully submit that Applicants' independent claims 27 and 29 are therefore not anticipated by O'Neil. Claim 27 recites, in part, "monitoring the web page request queue length." Additionally, independent claim 29 recites, in part, "monitoring the web page request queue delay."

Additionally, Applicants assert that it is not obvious to combine the teachings of O'Neil with the teachings of Haggard. With respect to claims 27, Applicants' claimed invention recites in part "monitoring the web page request queue length." Haggard fails to teach or suggest monitoring the request queue length. Instead, Haggard discloses generating the run queue length or the run time queue from analyzed and stored data, and presenting it to a user in a visual representation. These parameters are distinctly different from Applicants' claimed request queue length. Therefore, because Haggard fails to cure the deficiencies of O'Neil with respect to independent claim 27, this claim is allowable.

With respect to claims 29, Applicants' claimed invention recites in part "monitoring the web page request queue delay." Haggard fails to teach or suggest monitoring the request queue delay. Instead Haggard discloses generating the run queue length or the run time queue from analyzed stored data and presenting it to a user in a visual representation. These parameters are distinctly different from Applicants' claimed request queue delay. Therefore, because Haggard fails to cure the deficiencies of O'Neil with respect to independent claim 29, this claim is allowable.

Further, because Haggard teaches merging "other historical data" with the recently reflected data, it is improper to combine the teaching of Haggard with O'Neil. As stated previously in O'Neil, column 3, lines 56-57, the redirection decision is based upon "the nearly instantaneous server load." If one combined the teaching of Haggard, merging historical data with recent data, it would obviate the teaching of O'Neil of using "nearly instantaneous server load" to make a redirection decision. Therefore, Applicants submit that it would not be obvious to combine the teachings of Haggard to cure the defects of O'Neil with regard to Applicants claims 27-30.

Additionally, because claims 28 and 30 depend from allowable base claims Applicants respectfully request that they be passed to allowance in due course.

37 C.F.R. §1.131 Declaration

Submitted with this Amendment and Response is a declaration under 37 C.F.R. §1.131 asserting that Applicants had reduced to practice certain aspects of Applicants' claimed invention prior to October 6, 1997, the effective filing date of O'Neil.

Claims 1, 15, and 20

Independent claims 1, 15, and 20 are rejected under 35 U.S.C. § 1.02(e) as being anticipated by O'Neil. Applicants submit herewith the attached Declaration under 37 C.F.R. §1.131, thereby asserting Applicants had reduced to practice the elements of these claims and those that depend therefrom, at least as early as October 6, 1997, the effective filing date of O'Neil. Therefore, O'Neil does not anticipate the Applicants' claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1, 15, and 20.

Furthermore, because claims 6-14, 16, and 25 depend from allowable base claims, Applicants respectfully request the rejection of these claims be withdrawn and the claims passed to allowance, in due course.

Conclusion

In view of the foregoing, Applicants respectfully request reconsideration of the previously pending claims, consideration of the newly filed claims, withdrawal of the rejections, and allowance of claims 1, 6-16, 20, 25, and 26-33 in due course. If the Examiner believes that a telephone conference with Applicants' attorney would be helpful, the Examiner is invited to contact the Applicants' attorney at the number below.

Respectfully submitted,

Date: July 2, 2001
Reg. No. 41,059

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